

Work Order ID 102510

May-27-13 2:23:33 PM

102510 PRELIMINARY ISSUE

Page 1

Item ID: D4894-1
Revision ID: PRELIM
Item Name: Fwd Beam

Accept

N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 5/27/13 Start Qty: 1.00 *1*
Required Date: 6/03/13 Req'd Qty: 1.00 *1*

Cust Item ID:
Customer:

Reference:

Approvals: Process Plan: MLJ Date: 13-05-27 Tooling: _____
QC: _____ Date: _____ SPC (Y/N): _____

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D4894	PA1

100 0.00

100

FLOW WATER JET

Waterjet

Memo

0.00

FLOW CNC Waterjet

1-Cut as per Dwg
Dwg Rev: PA1
Prog Rev: PA1
2-Deburr if necessary

1 0 / 13.05.28

110 0.00

110

QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.00

Quality Control

1 0 / 13.05.28

114 0.00

114

Mill Conv

Memo

0.00

Conventional Milling Machine

13/05/29

1 0

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											
FAULT CATEGORY											
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube			General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio			<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions			<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other		

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Page 2

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Setup Start ***NS1***
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Start Date: 5/27/13 Start Qty: 1.00 ***1***
Required Date: 6/03/13 Req'd Qty: 1.00 ***1***

Cust Item ID:
Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
116 *116* QC Quality Control	QC2- Inspect parts off machine FAI/FAIB Memo	0.00 0.00				1	0		
120 *120* QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.00				1			
130 *130* HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1 NC BRAKE Memo	0.00 0.00				1			

WIP 13/05/29
29

QW 27
BS 29

1
Inspect as per
Dur PAI

1 *7/13/5-29*

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
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Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data <input type="checkbox"/>									
Equip/Tooling <input type="checkbox"/>									
Operator <input type="checkbox"/>									
Material <input type="checkbox"/>									
Setup <input type="checkbox"/>									
Other <input type="checkbox"/>									
Process <input type="checkbox"/>									
Supplier <input type="checkbox"/>									
Training <input type="checkbox"/>									
Unapproved <input type="checkbox"/>									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions
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<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other	
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Work Order ID 102510

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102510

Page 3

Item ID: D4894-1
Revision ID: PRELIM
Item Name: Fwd Beam

Accept

N900040100

Setup Start ***NS1***

Stop ***NS2***

Start Date: 5/27/13 Start Qty: 1.00 ***1***
Required Date: 6/03/13 Req'd Qty: 1.00 ***1***

Cust Item ID:

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140 *140* QC Quality Control	QC7-Inspect Chemical Conversion Coat Memo	0.00 0.00							
150 *150* Packaging Packaging	Identify as per dwg & Stock Location: _____ Memo	0.00 0.00							
160 *160* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00							

POSITIVE RECALL

EFFECTIVE 6/5/13 AUTH W

RELEASED _____ DATE _____

Revised

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
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Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data <input type="checkbox"/>									
Equip/Tooling <input type="checkbox"/>									
Operator <input type="checkbox"/>									
Material <input type="checkbox"/>									
Setup <input type="checkbox"/>									
Other <input type="checkbox"/>									
Process <input type="checkbox"/>									
Supplier <input type="checkbox"/>									
Training <input type="checkbox"/>									
Unapproved <input type="checkbox"/>									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions
---	---	---

<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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Picklist Print

May-27-13 2:23:37 PM

Page 1

Work Order ID: 102510

102510

Parent Item: D4894-1

D4894-1

Parent Item Name: Fwd Beam

Start Date: 5/27/13

Required Date: 6/03/13

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 13.05.27 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6B1.000X06.00 0		Purchased	No				f	28.6000		4.616842			
**										4.62		13.05.28	
M6061T6B1 000X06 000													
6061T6 BAR 1.00 X 6.00													

Location

Loc Qty

Loc Code

MAT003

28.6

125592

4.6

m125771

24

125592

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

FAULT CATEGORY

Landing Gear	General	Other
<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Grain
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Hardware
<input type="checkbox"/> Cracks	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Inspection Incomplete
<input type="checkbox"/> Crushed/Crimped	<input type="checkbox"/> Burrs	<input type="checkbox"/> Instructions Incomplete/Unclear
<input type="checkbox"/> Cuffs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Maintenance
<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Countersink	<input type="checkbox"/> Mislabelled
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Misread
<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Offset
<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Drawing	<input type="checkbox"/> Out of Calibration
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Sequence
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Folio	<input type="checkbox"/> Outside Dimensions
		<input type="checkbox"/> Ovalized
		<input type="checkbox"/> Over/Under tolerance
		<input type="checkbox"/> Part Incorrect
		<input type="checkbox"/> Part Lost/Missing
		<input type="checkbox"/> Part Moved
		<input type="checkbox"/> Positioned Wrong
		<input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced
		<input type="checkbox"/> Temperature/Cure
		<input type="checkbox"/> Weld
		<input type="checkbox"/> Wrong Stock Pulled
		<input type="checkbox"/> Other

DART AEROSPACE LTD		Work Order: 102510
Description: Fwd Beam		Part Number: D4894-1
Inspection Dwg: 4894 Rev: PA1		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
52.63	+/- 0.030	52.615	✓		MIP-07	Tape
19.75	+/- 0.030	19.75	✓		T	JKm-06
11.00	+/- 0.030	11.00	✓		T	JKm-06
6.50	+/- 0.030	6.50	✓		T	JKm-06
6.50	+/- 0.030	6.66	✓		V	JKm-01
0.65	+/- 0.030	0.642	✓		V	JKm-01
3.50	+/- 0.030	3.501	✓		V	JKm-01
1.50	+/- 0.030	1.503	✓		V	
4.35	+/- 0.030	4.27	✓		V	
0.75	+/- 0.030	0.75	✓		V	
3.80	+/- 0.030	3.80	✓		V	
0.60	+/- 0.030	0.527	✓		V	
2.85	+/- 0.030	2.851	✓		V	
4.35	+/- 0.030	4.346	✓		31006	Height Gauge
12.16	+/- 0.030	12.16	✓		T+V	
14.25	+/- 0.030	14.25	✓		T	
26.93	+/- 0.030	26.93	✓		T	
11.15	+/- 0.030	11.15	✓		T	
36.38	+/- 0.030	36.38	✓		T	
4.00	+/- 0.030	4.00	✓		T	
Ø 0.129	+0.005 -0.001	0.130	✓		MIP-04	Vern
1.00	+/- 0.030	1.02	✓		V	
3.00	+/- 0.030	3.00	✓		V	

Measured by: Ae / MIP	Audited by: D40	Preliminary Approval:
Date: 13.05.28	Date: 13.5.29	Date:

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	

10.04.15

DART AEROSPACE LTD		Work Order:	102510
Description: Fwd Beam		Part Number:	D4894-1
Inspection Dwg: 4894 Rev: PA1		Page 1 of 1	

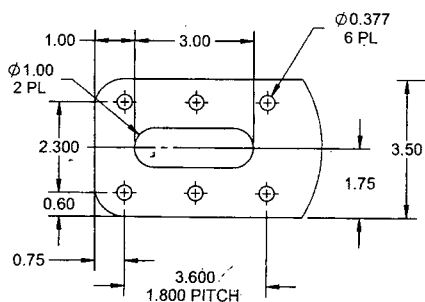
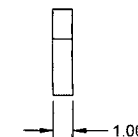
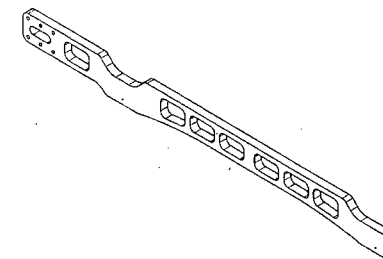
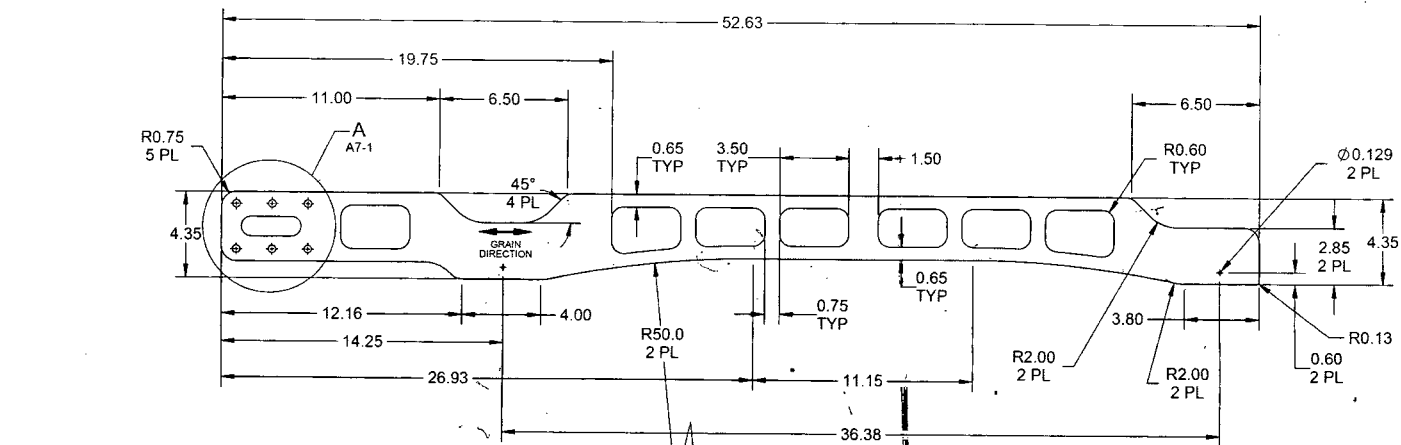
DETAIL A: FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
1.00	± 0.030	1.00	✓		T	JKm-06
2.30	± 0.030	2.30	✓		T	JKm-06
Ø 0.377	$\pm 0.006 - 0.001$	0.380	✓		MIP-04	Vern
2.30	± 0.030	2.30	✓		T	
1.75	± 0.030	1.75	✓		T	
3.50	± 0.030	3.496	✓		V	JKm-01
0.60	± 0.030	0.64	✓		V	
0.75	± 0.030	0.75	✓		T	
3.60	± 0.030	3.60	✓		T	
1.00	± 0.030	1.014	✓		MIP-04	Vern
0.60	± 0.030	0.600	✓		---	---
0.75	± 0.030	0.748	✓		---	---
2.300	± 0.010	2.303	✓		---	---
1.800 (PTH)	± 0.010	1.801	✓		---	---
3.600	± 0.010	3.597	✓		---	---
14.25	± 0.030	14.250	✓		MIP-07	Tape
0.60	± 0.030	0.597	✓		MIP-04	Vern
36.38	± 0.030	36.365	✓		---	---
0.60	± 0.030	0.600	✓		---	---

Measured by: <i>1/A</i>	Audited by:	Preliminary Approval:
Date: 13.05.28	Date:	Date:

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	

10.04.15



DETAIL A D7-1

D4894-1 FWD BEAM

UNCL
SUB

102510 MJS
130527

PRELIMINARY ISSUE

13.05.24

NOTES:

- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
REF DART SPEC M6061T6B
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 12.00 lbs

PA1	NEW ISSUE	RF	13.05.24
REV.	DESCRIPTION	BY	DATE
DESIGN	RF		
DRAWN	RF		
CHECKED	<i>[Signature]</i>		
MFG. APPR.	<i>[Signature]</i>		
APPROVED			
DE APPR.			
DATE	13.05.24		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D4894	REV. PA1
TITLE BEAM	SHEET 1 OF 2
	SCALE NTS

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NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT
WRITTEN PERMISSION FROM DART AEROSPACE LTD.

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

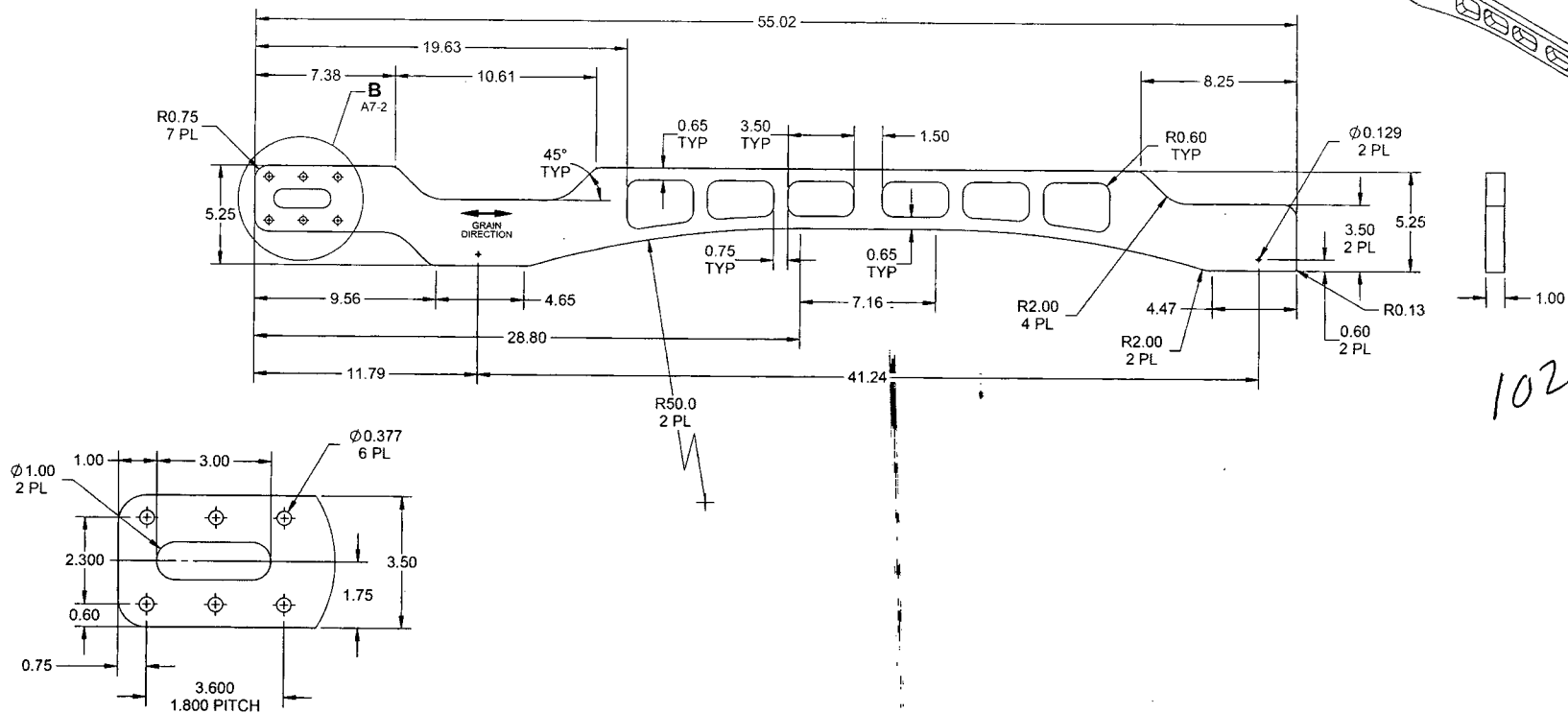
QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">Skid-tube <input type="checkbox"/></td> <td style="width: 25%;">Crosstube <input type="checkbox"/></td> <td style="width: 25%;">Water Jet <input type="checkbox"/></td> <td style="width: 25%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

FAULT CATEGORY

Landing Gear	General	Other
<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Grain
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Hardware
<input type="checkbox"/> Cracks	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Inspection Incomplete
<input type="checkbox"/> Crushed/Crimped	<input type="checkbox"/> Burrs	<input type="checkbox"/> Instructions Incomplete/Unclear
<input type="checkbox"/> Cuffs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Maintenance
<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Countersink	<input type="checkbox"/> Mislabelled
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Misread
<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Offset
<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Drawing	<input type="checkbox"/> Out of Calibration
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Sequence
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Folio	<input type="checkbox"/> Outside Dimensions
		<input type="checkbox"/> Ovalized
		<input type="checkbox"/> Over/Under tolerance
		<input type="checkbox"/> Part Incorrect
		<input type="checkbox"/> Part Lost/Missing
		<input type="checkbox"/> Part Moved
		<input type="checkbox"/> Positioned Wrong
		<input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced
		<input type="checkbox"/> Temperature/Cure
		<input type="checkbox"/> Weld
		<input type="checkbox"/> Wrong Stock Pulled
		<input type="checkbox"/> Other



DETAIL B D7-2

D4894-3 AFT BEAM

PRELIMINARY ISSUE

13.05.24

NOTES:

- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
REF DART SPEC M6061T6B
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005.4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 14.19 lbs

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. PA1
MFG. APPR.	<i>[Signature]</i>	D4894	SHEET 2 OF 2
APPROVED		TITLE	SCALE
DE APPR.		BEAM	NTS
DATE	13.05.24	<small>COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD</small>	

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

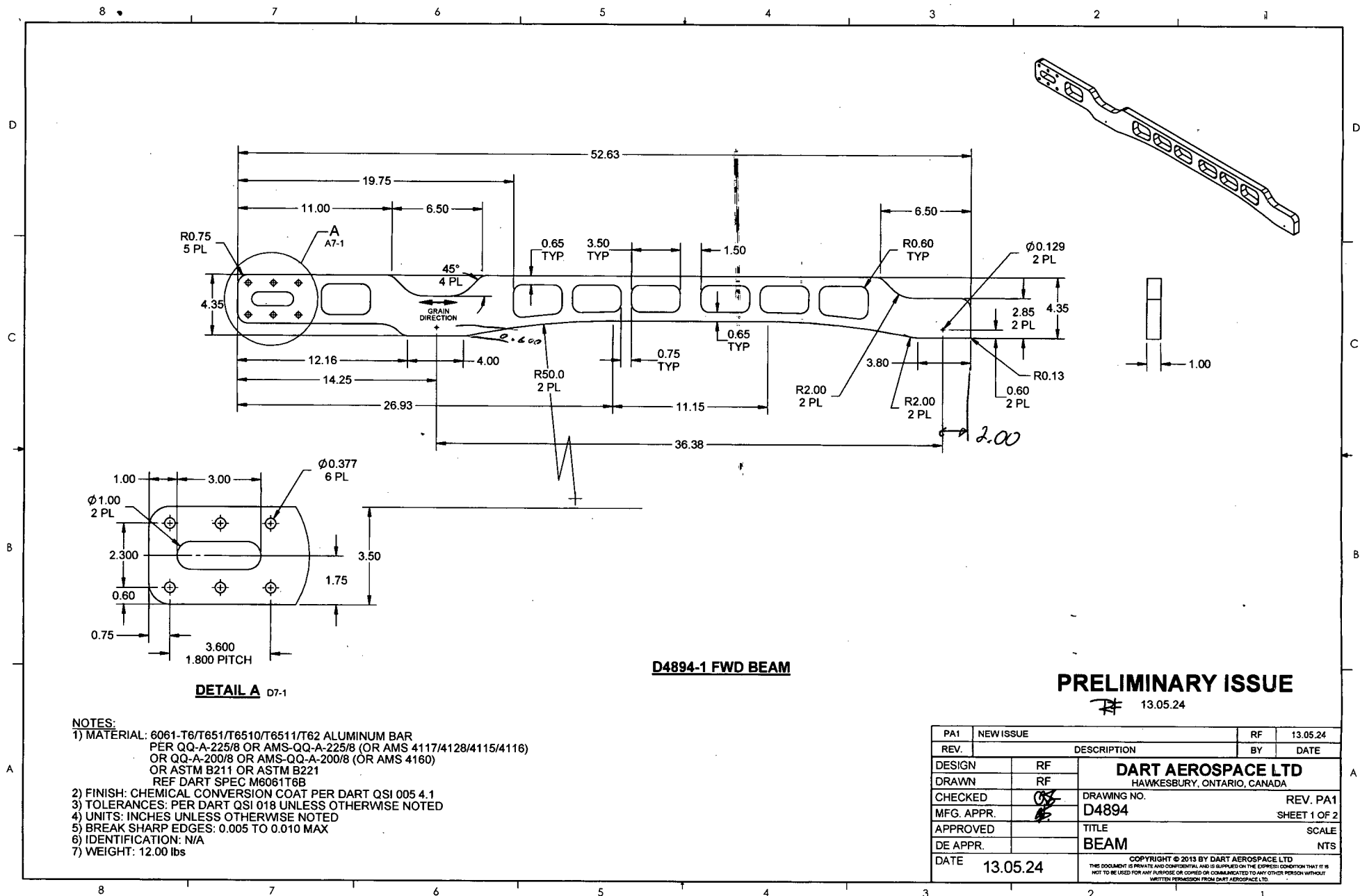
QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

FAULT CATEGORY

Landing Gear	General	Other
<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Grain
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Hardware
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<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Folio	<input type="checkbox"/> Outside Dimensions
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		<input type="checkbox"/> Part Moved
		<input type="checkbox"/> Positioned Wrong
		<input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced
		<input type="checkbox"/> Temperature/Cure
		<input type="checkbox"/> Weld
		<input type="checkbox"/> Wrong Stock Pulled
		<input type="checkbox"/> Other



NOTES:

- 1) MATERIAL: 6061-T6/T6510/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
REF DART SPEC M6061T6B
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 12.00 lbs

Receiving Report

Date: 13/05/10
 Supplier: THY 0812K

Batch No: 0125052
 Dart P/O: 19834

Packing Slip: Yes ☒ No ☐
 Invoice: Yes ☐ No ☒
 Receipt: Cash ☐ Cr ☐

Release Note Attached: Yes ☒ No ☐ N/A ☐
 Waybill Attached: Yes ☒ No ☐ N/A ☐
 Shipment Complete: Yes ☒ No ☐ N/A ☐
 QC6 Inspection: OK 13/05/12 N/A ☒
 Work Order: _____ N/A ☒

Discrepancies

Part Number	Description	Quantity Ordered	Quantity Received	Quantity Returned	Quantity Short	Comments

Initials of receiver (if shipment OK) Level 12

Production/Admin: 13/05/10
 Date
 Received/Costing CR
 Initial

Location _____

All amounts are calculated in domestic currency.

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Description/ Cert Std	PO U/M/ Stock U/M	Required Date Required Qty	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
Vendor ID/Vendor Name		VC-COP001 Thyssenkrupp Materials CA Ltd									
PO19834	1		M6061T6B2.000X03. f		5/13/2013	5/10/2013	12.0000	\$16.71	0.0000	0	\$200.51
			500								
(AD)	No		6061-T6 Bar 2.00 x f		12.0000	DESJ02		\$200.51	0.0000	0	
			500								
			125592								
	2		M6061T6B1.000X06. f		5/13/2013	5/10/2013	12.0000	\$14.23	0.0000	0	\$170.73
			000								
	No		6061-T6 BAR 1.00 X f		12.0000	DESJ02		\$170.73	0.0000	0	
			6.00								
			125592								
	3		M6061T6B0.500X05. f		5/13/2013	5/10/2013	72.0000	\$5.96	0.0000	0	\$428.80
			000								
	No		6061-T6 Bar .500 x f		72.0000	DESJ02		\$428.80	0.0000	0	
			5.00								
			125592								
	4		M6061T6B0.500X10. f		5/13/2013	5/10/2013	24.0000	\$11.66	0.0000	0	\$279.91
			000								
	No		6061-T6 Bar .500 x f		24.0000	DESJ02		\$279.91	0.0000	0	
			10.00								
			125592								
	5		M6061T6H1.000 f		5/13/2013	5/10/2013	24.0000	\$1.99	0.0000	0	\$47.64
			000								
	No		6061-T6 HexBar 1.00 f		24.0000	DESJ02		\$47.64	0.0000	0	
			125592								
	6		M303B0.750X1.500 f		5/15/2013	5/10/2013	12.0000	\$18.81	0.0000	0	\$225.72
			000								
	No		303 BAR .750" X f		12.0000	DESJ02		\$225.72	0.0000	0	
			1.500"								
			125592								

Total Received Quantity:	156.0000
Total Qty to Inspect (PO U/M):	0.0000
Total Reject Quantity:	0.0000
Total Receipt Value:	\$1,353.31
Total Balance Due Quantity:	0.0000

SHIP FROM: B I L L O F L A D I N G
THYSSENKRUPP MATERIALS NA
2821 LANGSTAFF ROAD
CONCORD, ONTARIO L4K 5C6
Tel: 905 669 9444 Fax: 905-738-9033

SHIP TO: (1)
DART AEROSPACE
1270 ABERDEEN ST
HAWKESBURY, ON K6A 1K7
Tel: 613-632-9577 Fax: 613-632-1053

No: PEC 821693
Ship Date 09May13 at 13:04 From PFW
Probill
Via VIM TRANSFER
FOB CONCORD
Frt PREPAID
Route 0- 0 Manifest
Vhcle Trailer
Slp STAN IVERS (905-532-1350)
Sold To: (20115)
DART AEROSPACE
1270 ABERDEEN ST
HAWKESBURY, ON K6A 1K7

B I L L O F L A D I N G
1) Our Order PEC-565364- 1 Your PO # 19834
Part # STANDARD LENGTH Rel #
ALUMINUM FLAT BAR 6061-T6511

Heat Number	Tag No	Quantity	PCS	Wt LBS
19844	177886	12 FT	1	99

2) Our Order PEC-565364- 2 Your PO # 19834
ALUMINUM FLAT BAR 6061-T6511
1.00" x 6.00" X 144.0000"

Heat Number	Tag No	Quantity	PCS	Wt LBS
201306967	177887	12 FT	1	8

3) Our Order PEC-565364- 3 Your PO # 19834
ALUMINUM FLAT BAR 6061-T6511
.50" x 5.00" X 144.0000"

Heat Number	Tag No	Quantity	PCS	Wt LBS
201305283	177888	60 FT	5	179
201305283	177967	12 FT	1	36
Total:		72 FT	6	215

4) Our Order PEC-565364- 4 Your PO # 19834
ALUMINUM FLT BAR ECONOPLT 6061-T6511
.500" X 10.00" X 144.0000"

Heat Number	Tag No	Quantity	PCS	Wt LBS
201300385	177889	12 FT	1	69
201300758	177890	12 FT	1	70
Total:		24 FT	2	139

Page: 1Continued

TOUTES ERREURS ET/OU MARCHANDISES MANQUANTES DOIVENT ÊTRE
RAPPORTÉES IMMÉDIATEMENT.
ERRORS OR SHORTAGE MUST BE REPORTED IMMEDIATELY.
RETOUR DE MARCHANDISES AVEC NOTRE NUMÉRO D'APPROBATION SEULEMENT
MERCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NUMBER.

SHIP FROM: B I L L O F L A D I N G
THYSSENKRUPP MATERIALS NA
2821 LANGSTAFF ROAD
CONCORD, ONTARIO L4K 5C6
Tel: 905 669 9444 Fax: 905-738-9033

No: PEC 821693
Ship Date (May13 at 13:04 From PFW
Probill
Via VIM TRANSFER
FOB CONCORD
Frt PREPAID
Route 0- 0 Manifest
Vhcle Trailer
Slp STAN IVERS (905-532-1350)
Sold To: (20115)
DART AEROSPACE

Ship To: (1)
DART AEROSPACE

B I L L O F L A D I N G

5) Our Order PEC-565364- 5 Your PO # 19834
ALUMINUM HEXAGON BAR 6061-T6511
1.00" X 144.0000"

Heat Number	Tag No	Quantity	PCS	Wt LBS
201300916	177891	24 FT	2	25

TOTAL:	Tags 7	PCS 12	LBS 564
--------	--------	--------	---------

Heat Number
19844
201300385
201300758
201300916
201305283
201306967

*** Chemical Analysis ***

MILL TEST REPORTS, PACKING SLIPS ARE TO SENT
WITH MATERIAL AND FAXED TO THE CUSTOMER PRIOR
TO SHIPPING.

ATTN: CHANTAL/LINDA

** ALL PACKING SLIPS MUST HAVE THE HEAT NUMBER **
** REFERENCED ON IT **

TOTAL OF 1 BDL GR.W. 539 LBS

*CUSTOMER PICK-UP HRS AT THYSSENKRUPP MATERIALS NA
CONCORD, ONT.* *** 9:00 AM TO 4:00 PM ***

**** TEL. 800-926-2600 ****

* WE STOCK STAINLESS STEEL *

* PLEASE LET US QUOTE YOUR NEXT REQUIREMENT *

Page: 2Continued

TOUTES ERREURS ET/OU MARCHANDISES MANQUANTES DOIVENT ÊTRE
RAPPORTÉES IMMÉDIATEMENT.
ERRORS OR SHORTAGES MUST BE REPORTED IMMEDIATELY.
RETOUR DE MARCHANDISES AVEC NOTRE NUMÉRO D'APPROBATION SEULEMENT.
MERCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NUMBER.

SHIP FROM:
THYSSENKRUPP MATERIALS NA
2821 LANGSTAFF ROAD
CONCORD, ONTARIO L4K 5C6
Tel: 905 669 9444 Fax: 905-738-9033

Ship To: (1)
DART AEROSPACE

Bill of Lading
No: PEC 821693
Ship Date 09May13 at 13:04 From PFW
Probill
Via VIM TRANSFER
FOB CONCORD
Frt PREPAID
Route 0- 0 Manifest
Vhcle Trailer
Slp STAN IVERS (905-532-1350)
Sold To: (20115)
DART AEROSPACE

=====

B I L L O F L A D I N G

***PLEASE NOTE A \$25.00 ENERGY SURCHARGE WILL BE
ADDED TO EVERY ORDER.***

Page: 3 Last

TOUTES ERREURS ET/OU MARCHANDISES MANQUANTES DOIVENT ETRE
RAPPORTEES IMMEDIATEMENT A NOS AGENTS
ERRORS OR SHORTAGE MUST BE REPORTED IMMEDIATELY
RETOUR DE MARCHANDISES AVEC NOTRE NUMERO D'APPROBATION SEULEMENT
MERCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NUMBER

THYSSENKRUPP MATERIALS NA

DART AEROSPACE

ALUMINUM FLAT BAR 6061-T6511

1.00" x 6.00" X 144.0000"

PART NO.

PO/Rel 19834

We certify that this is a true copy of the report furnished by the producer of the metal, or data resulting from tests made in approved labs.

Certificate of Mill Test Results

BL PEC-821693-002

9May13

Pg 1/1



SERVICE CENTER METALS

5850 Quality Way

Prince George, VA 23875

CERTIFIED INSPECTION REPORT AND TEST RESULTS FOR EXTRUDED PRODUCTS

OUR ORDER NUMBER	ITEM
173807	5

BILL TO

ThyssenKrupp Materials NA

SHIP TO

ThyssenKrupp Materials NA, Toronto

Quantity Certified 1,197 lbs 14pcs

MANIFEST NUMBER

187246

DIE NUMBER

MRB1826

DATE OF SHIPMENT

4/12/2013

CUSTOMER PO

PEC-247407

ALLOY/TEMPER

6061-T6511

SALESPERSON

David Schroeder

CUSTOMER PART NUMBER

MRB1826

DESCRIPTION

MQRB 1.000x6.000

CERTIFICATION

ASTM-B221-12a StencilCont

SPECIFICATION

AMS-QQA-200/8 - 1997

on 13/04/12

We hereby certify that the material covered by this report has been inspected in accordance with the most recent certification revision, and has been found to meet the applicable requirements described herein, including any specifications forming a part of the description, and that samples representative of the material met the composition limits and had the mechanical properties shown. SCM extrusions are manufactured in the USA.

Items produced and certified as 6061-T6511 also meet the requirements of 6061-T6

Mechanical Properties

Tests

Lot No.

4

201306967

Test Date

4/11/13

Ultimate Tensile
Strength (KSI)

min max
48.30 50.80

Yield Strength
(KSI)

min max
46.40 49.20

Percent
Elongation

min max
15.20 17.90

Chemical Composition for Aluminum Alloy 6061

Cast Number	Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al	Others		Melt Source:
											Each	Total	
0313147	6061	0.74	0.38	0.31	0.10	0.90	0.11	0.07	0.02	97.37	0.05	0.15	United States of America
0313150	6061	0.76	0.35	0.32	0.10	0.86	0.11	0.07	0.02	97.41	0.05	0.15	United States of America

Calvin J. Wiggins

Print Date: 4/12/2013

Calvin J. Wiggins, Director of Quality & Technical Services

Rev 9/29/11 - DMS



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO19834**

Purchase Order Date 5/8/2013
PO Print Date 5/8/2013

Page Number 1 of 3

Order From :

VC-COP001

THYSSENKRUPP MATERIALS CA LTD
O/A VPK METAL- C/O T27540/PO BOX 4275, POSTAL "A"
TORONTO, ON M5W 5V8
CA

Contact Name
Vendor Phone 905 669 9444
Vendor Fax 905 738 9033
Vendor Account Nbr

Buyer Chantal Lavoie
Requisition Nbr
Tax Resale Nbr 10127-2607
Terms Net 30
Currency CAD
FOB Destination-Collect

M/20592

Ship To : DART AEROSPACE LTD 1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

FAXED
06/13/2013

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	M6061T6B2.000X03.500	6061-T6 Bar 2.00 x 3.50	5/13/2013 Yes	12.00 f	Yours ppd	\$16.8333	\$202.00 ✓
		Special Inst: MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR AS PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117/4128/4115/4116 OR QQ-A-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B211 OR ASTM B221					
2	M6061T6B1.000X06.000	6061T6 BAR 1.00 X 6.00	5/13/2013 Yes	12.00 f	Yours ppd	\$14.3333	\$172.00 ✓
		Special Inst: MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR AS PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117/4128/4115/4116 OR QQ-A-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B211 OR ASTM B221					

PO Instructions: NO PEC ST-564517
NO PEC ST-565145

No substitution or deviation without consent.
Certificate of Conformity or Material Certification required **YES** NO

Change Nbr: 1

Change Date: 5/8/2013



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO19834

Purchase Order Date 5/8/2013

PO Print Date 5/8/2013

Page Number 2 of 3

Order From :

VC-COP001

THYSSENKRUPP MATERIALS CA LTD
O/A VPK METAL- C/O T27540/PO BOX 4275,POSTAL "A"
TORONTO, ON M5W 5V8
CA

Contact Name

Vendor Phone 905 669 9444

Vendor Fax 905 738 9033

Vendor Account Nbr

Buyer

Chantal Lavoie

Requisition Nbr

Tax Resale Nbr

Terms

Currency

FOB

10127-2607

Net 30

CAD

Destination-Collect

QTY	Part Number	Description	Unit Price	Unit	Price	Unit Price	Unit Price
3	M6061T6B0.500X05.000	6061-T6 Bar .500 x 5.000	5/13/2013	72.00	Yours ppd	\$6.0000	\$432.00
			Yes	f			

Special Inst:

MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR
AS PER QQ-A-225/8 OR AMS-QQ-A-225/8
OR AMS 4117/4128/4115/4116
OR QQ-A-200/8 OR AMS-QQ-A-200/8 OR
AMS 4160 OR ASTM B211 OR ASTM B221

4	M6061T6B0.500X10.000	6061-T6 Bar .500 x 10.000	5/13/2013	24.00	Yours ppd	\$11.7500	\$282.00
			Yes	f			

Special Inst:

MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR
AS PER QQ-A-225/8 OR AMS-QQ-A-225/8
OR AMS 4117/4128/4115/4116
OR QQ-A-200/8 OR AMS-QQ-A-200/8 OR
AMS 4160 OR ASTM B211 OR ASTM B221

5	M6061T6H1.000	6061-T6 HexBar 1.000	5/13/2013	24.00	Yours ppd	\$2.0000	\$48.00
			Yes	f			

Special Inst:

MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM HEX BAR
SPEC: QQ-A-225/8 OR AMS-QQ-A-225/8
(OR AMS4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR
AMS 4160) OR ASTM B211 OR ASTM B221

PO Instructions:

NO PEC ST-564517
NO PEC ST-565145

No substitution or deviation without consent.

Certificate of Conformity or Material Certification required ☒ YES ☐ NO

Change Nbr:

1

Change Date: 5/8/2013



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO19834

Purchase Order Date 5/8/2013

PO Print Date 5/8/2013

Page Number 3 of 3

Order From :

VC-COP001

THYSSENKRUPP MATERIALS CA LTD
O/A VPK METAL- C/O T27540/PO BOX 4275, POSTAL "A"
TORONTO, ON M5W 5V8
CA

Contact Name

Vendor Phone

905 669 9444

Vendor Fax

905 738 9033

Vendor Account Nbr

Buyer

Chantal Lavoie

Requisition Nbr

Tax Resale Nbr

10127-2607

Terms

Net 30

Currency

CAD

FOB

Destination-Collect

6	M303B0.750X1.500	303 BAR .750" X 1.500"	5/15/2013 Yes	12.00 f	Yours ppd	\$18.9500	\$227.40
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Special Inst: MATERIAL: AISI 303 SS BAR AS PER
ASTM A582
NOTE: 304/316 NOT ACCEPTABLE

PO Total:

\$1,363.40

MATERIAL CERTIFICATION
REQ'D UPON DELIVERY

PO Instructions: NO PEC ST-564517
NO PEC ST-565145

Change Nbr: 1

Change Date: 5/8/2013

No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required - YES NO